| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/647,937 | 08/25/2003 | Kyu Chan Roh | 2060-3-52 | 3034 |

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| EXAMINER |
|---|
| AN, SHAWN S |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2613 | |

DATE MAILED: 11/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | Application No. | Applicant(s) |
| *Office Action Summary* | 10/647,937 | ROH, KYU CHAN |
| | Examiner | Art Unit |
| | Shawn S An | 2613 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>07 September 2004</u>.

2a)☐ This action is **FINAL**.       2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>1-30</u> is/are pending in the application.

    4a) Of the above claim(s) <u>21-28</u> is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,3,11,16,20,29 and 30</u> is/are rejected.

7)☒ Claim(s) <u>2,4-10,12-15 and 17-19</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some *  c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>8/27/2003</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

# DETAILED ACTION

## *Response to Restriction/Election*

1.      Applicant's election without traverse of species I corresponding to figures 4 and 8, claims 1-20 and 29-30 as filed on 9/7/2004 have been acknowledged. Therefore, claims 21-28 belongs to non-elected claims.

The requirement is deemed proper and is therefore made FINAL.

## *Claim Objections*

2.      Claims 2, 4-10, and 30 are objected to because of the following informalities:

In claim 2, line 10, the recited claim limitations "first inverse-quantizer and the second quantizer;" should be changed to "first quantizer and the second inverse quantizer;" according to Applicant's figure 4.

In claim 30, line 5, the recited claim limitations "first inverse-quantization to output ..., based on a second quantization." should be changed to "second inverse-quantization to output ..., based on a first quantization." according to Applicant's figure 4.

Appropriate corrections are required.

Note: The claim 2 seems to contain novel features (upon correction). However, the merits pertaining to claims 2, and 4-10 will be put on hold until the Applicant makes the correction.

## *Claim Rejections - 35 USC § 103*

3.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.      Claims 1, 3, 16, and 20 are rejected under 35 U.S.C. 103(a) as being
unpatentable over kleihorst et al (5,619,501).

**Regarding claims 1 and 16**, Kleihorst et al discloses an apparatus/method for
partitioning picture data, comprising:

a first quantizing unit (Fig. 2, 301) for first quantizing a received image signal and
outputting a first quantized signal; and

a second quantizing unit (Fig. 2, 302) for second quantizing the first quantized
signal and partitioning the first quantized signal into a preceding part (output, 301) and a
succeeding part (305 and/or 306); and

outputting an output signal generated (306) as a result of the second quantization
as a partitioned stream signal.

Kleihorst et al does not specifically disclose receiving/partitioning a video signal.

However, the video signal encoder such as an MPEG encoder is well known in
the art. Furthermore, Kleihorst teaches MPEG encoders (col. 1, lines 34-44) and that
the invention can be applied to virtually any type of information (col. 2, lines 52-56).

Therefore, it would have been obvious to a person of ordinary skill in the relevant
art employing an apparatus for partitioning picture data as taught by Kleihorst et al to
incorporate the teachings as also taught by Kleihorst et al so as to receive/partition a
video signal in addition to a picture/image (JPEG) signal for processing/encoding video
signals (moving picture data).

**Regarding claim 3**, Kleihorst et al discloses frequency component D(2, K).

**Regarding claim 20**, the Examiner takes official notice that a texture marker for
marking/analyzing texture of the image in different regions is conventionally well known
in the art.

Therefore, it would have been obvious to a person of ordinary skill in the relevant
art employing an apparatus for partitioning picture data as taught by Kleihorst et al to
incorporate the conventional concept as above to determined texture based parameters
as a way of judging between quality region A verses quality region B.

5.      Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over kleihorst et al (5,619,501) in view of Kim (6,055,272) and Applicant's admitted prior art.

**Regarding claim 11**, Kleihorst et al discloses an apparatus for partitioning picture data, comprising:

a coding unit outputting a stream comprising a plurality of blocks of DCT coefficients by first quantizing (Fig. 2, 301) and second quantizing (302) a received image signal.

Kleihorst et al does not specifically disclose a DCT coefficient divided into an even-approximated coefficient and an odd-remainder coefficient.

Kleihorst et al does not also disclose receiving/partitioning a video signal, and a decoding unit for obtaining a first quantized signal by performing inverse-Q about the stream generated by the coding unit and obtaining a restored video signal by performing inverse Q about the first quantizing.

However, receiving/partitioning a video signal, and a decoding unit for obtaining a first quantized signal by performing inverse-Q about the stream generated by the coding unit and obtaining a restored video signal by performing inverse Q about the first quantizing is conventionally well known in the art.

Furthermore, Kim teaches a video encoder comprising DCT coefficients divided into an even coefficient and an odd coefficient (col. 3, lines 34-51).

Moreover, Applicant's admitted prior art teaches receiving/partitioning a video signal (Fig. 1, Video Signal), and a decoding unit for obtaining a first quantized signal (3) by performing inverse-Q (4) about the stream generated by the coding unit (Fig. 1) and obtaining a restored video signal by performing inverse Q about the first quantizing.

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing an apparatus for partitioning picture data as taught by Kleihorst et al to incorporate the teachings as above as taught by Kim and Applicant's admitted prior art so that the DCT coefficient divides into an even-approximated coefficient and an odd-remainder coefficient for increasing the processing speed necessary as well as receiving/partitioning a video signal in addition to a picture/image (JPEG) signal for processing/encoding video signals (moving picture data) with much more efficiency.

6.      Claims 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over
kleihorst et al (5,619,501) in view of Kim (6,055,272).

**Regarding claim 29**, Kleihorst et al discloses a method for partitioning a picture
data, comprising:

quantizing the picture data for outputting a first quantized signal (Fig. 2, 301); and

quantizing (302) the first quantized signal to obtain a quantized plurality of
coefficients.

Kleihorst et al does not particularly disclose partitioning/quantizing a streaming
data, and obtaining even-approximated coefficient and an odd-remainder coefficient,
and variable length coding the even-approximated coefficient and an odd-remainder
coefficient and outputting a data-partitioned stream based on the variable length coding.

However, Kim teaches a video encoder comprising partitioning/quantizing a
streaming data (Fig. 1, Input Data and 1-2) and obtaining DCT coefficients obtained in
the DCT, the quantization, and the zig zag scanning steps in an even coefficient and an
odd coefficient (col. 3, lines 43-51), and variable length coding the even-approximated
coefficient and the odd-remainder coefficient, and outputting a data-partitioned stream
based on the VLC (Fig. 1, 5;  col. 6, lines 15-20).

Therefore, it would have been obvious to a person of ordinary skill in the relevant
art employing an apparatus for partitioning picture data as taught by Kleihorst et al to
incorporate the teachings as above as taught by Kim for obtaining even-approximated
coefficient and an odd-remainder coefficient, and variable length coding the even-
approximated coefficient and an odd-remainder coefficient to increase the processing
speed necessary as well as receiving/partitioning a video signal in addition to a
picture/image (JPEG) signal for processing/encoding video signals (moving picture
data) with much more efficiency.

**Regarding claim 30**, Kim discloses partitioning the data-partitioned (block)
stream into a plurality of data streams and variable length coding (Fig. 1, 5) the
respective data streams.

Kim also discloses obtaining an even coefficient and an odd coefficient based on
a first quantization as discussed above.

Furthermore, an inverse quantization is a mere reverse process of quantization for restoring a video/picture signal.

Moreover, Kleihorst et al discloses second inverse Q (Fig. 8, 702) to output a restored video signal.

Therefore, in addition to the discussion (claim 29) directly above, it would have been obvious to a person of ordinary skill in the relevant art employing an apparatus for partitioning picture data as taught by Kleihorst et al to incorporate the teachings as above as taught by Kim for obtaining even-approximated coefficient and an odd-remainder coefficient through the second inverse Q to output a restored video signal for processing/encoding video signals (moving picture data) with much more efficiency and faster processing.

## *Allowable Subject Matter*

7.    Claims (2, 4-10), (12-15), and (17-19) are objected to as being dependent upon a rejected base claims 1, 11, and 16, respectively, but would be allowable:
if claim 2 is rewritten in independent form including all of the limitations of the base claim 1, and only if claim 2 is corrected as discussed above;  and if claim 12 is rewritten in independent form including all of the limitations of the base claim 11;  and if claim 17 is rewritten in independent form including all of the limitations of the base claim 16.

Dependent claims (2, 4-10), (12-15), and (17-19) recite novel features at least comprising inverse-quantizing the re-quantized signal and calculating a difference based on the first quantized signal, and VLC coding the calculated difference, wherein the art of records fail to anticipate or make obvious.

Accordingly, if the amendments are made to the claims listed above, and if rejected claims are canceled, the application would be placed in condition for allowance.

## *Conclusion*

8.      The prior art made of record and not relied upon is considered pertinent to
Applicant's disclosure.

>   A)  Kim (5,825,970),  Quantization number selecting apparatus for DVCR and
>   method thereof.
>
>   B)  Fert (5,500,677), Device for encoding digital signals representing images ,
>   and corresponding decoding device.

9.      Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Shawn An whose telephone number (703) 305-0099
and schedule are Tuesday-Friday.

10.     The fax phone number for the organization where this application or proceeding
is assigned is 703-872-9306.

11.     Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system.  Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

SSA

Primary Patent Examiner

11/17/04